ST. BARTHOLOMEW'S HOSPITAL JOURNAL

Vol. LXIV No. 1 JANUARY 1960

EDITORIAL

Apartheid is a vexed question on which it is hard to express a balanced opinion. For the majority in this country South Africa is a remote place and few of us have any experience of the problem of apartheid as it exists there. Public interest in the problem is sporadic, stimulated from time to time by some fresh development reported in the columns of the ever vigilant British Press. Nevertheless the majority of thinking people in this country condemn apartheid as morally unjustifiable.

Interest has recently centred on the boycott of South African goods with which the University Unions of Oxford, Cambridge, Newcastle and Liverpool have associated themselves, together with a number of other organisations. This matter was debated in the Students' Union Council Meeting of December 2nd. No one advocated boycott action within the hospital and it was clear that any such proposal would not receive sympathetic treatment from the Council. A resolution was then passed calling for a referendum of student opinion on the policy of apartheid in South African universities. A further suggestion that the Students' Union should hold a debate prior to the referendum in which both sides of the problem could be clearly stated, was adopted. The main purpose of the referendum is to enable the President of the Students' Union to inform the University of London Union of the state of student opinion in this hospital should he be called upon to do so.

The Medical Profession has always attempted to keep aloof from politics unless they are directly concerned, and in this matter caution must be urged upon the Students' Union.

All the student members of the hospital are represented by a University Union (be it U.L.U., O.U.S. or C.U.S.), which, being semi-political bodies are the right and proper channels for the expression of student opinion. The Students' Union of this hospital is not a political body ; moreover the lay public is unlikely to recognise the distinction between the Students' Union in particular and the Hospital in general. Any *ex cathedra* pronouncement on apartheid which may result from the debate to be held by the Students' Union therefore runs the risk of being interpreted by the public, and more particularly by the Press, as a statement of Hospital opinion, and hence of at least a section (and, one hopes, a highly respected section) of the medical profession.

The Council of the Students' Union are to be congratulated on their common sense in avoiding the question of a boycott. It is to be hoped that the motion for debate will be phrased with great care to avoid possible embarrassment. A simple discussion following paper speeches would avoid the necessity of committing the Union by the carriage or rejection of a motion.

95292

James Paget

The 60th anniversary of the death of Sir James Paget was on the 30th of last month. Perhaps because of the special place he holds in the Hospital's historical pride, it is difficult to realise that he failed so narrowly to live into the 20th century, and that his life overlapped those of many present members of the staff. With Pott and Abernethy, he must be thought of by many as a giant of the indefinite past.

There is some excuse for this. He was born in the merchant port of Yarmouth in the year before Waterloo. After training his mind by much reading and the study of the natural history of the Yarmouth area, he entered at St. Bartholomew's in 1834, and proceeded to make himself one of the very last men ever to have a complete understanding of all that his world knew about anatomy, pathology, surgery and the new physiology. But like all great Victorians he was both the last of one age and the first of another. After waiting seven years for a hospital post (even he! what hope for the rest of us?) he was appointed the first lecturer in Physiology to the Hospital. In the years that followed he became the English Virchow in his development of cellular pathology. His stature was formed in his sixteen years or so of teaching, but most of his life was given to his private practice and his hospital surgeoncy, and he continued the former until a very few years before his death.

Some of Paget's most valuable work for the Hospital was in resurrecting the Medical College from the abyssmal state it had fallen to since the days of Abernethy. He thought out the idea of a residential college on the Cambridge system, and in 1843 became both its first Warden and Dean. As a result the College rallied in numbers and quality at a time when in a few years it might have become extinct. In Paget's words, not only was it "no longer possible for anyone to be thoroughly idle or thoroughly vicious without being observed" but "it introduced at once that of which the want had been the great defect of the School, a plan for the general supervision and guidance of the students:" for "it became the duty of the Warden to advise nearly all students as to their course of study".

Many may feel that such a personal system of supervision would be valuable even today.

Faculty of the History of Medicine and Pharmacy

The foundation of this faculty last September by the Worshipful Society of Apothecaries is an important event. "Its aim is to foster and extend more general interest in medical history, and to attract the co-operation of general historians, so that work in this field may be co-ordinated with wider historical studies." With this end in view, symposia, discussions, and congresses will be organised and visits to sites of medical historical interest arranged. There is in addition a research Fellowship, endowed by the Wellcome Trustees, and held at present by Mr. R. S. Roberts, a professional historian, who is working on the early organisation of the drug trade from the 17th century.

Not the least important aspect of the faculty is the Panel of Lecturers who will be available to those schools who become Corporate Members, which may be arranged at a very moderate subscription. Two London teaching hospitals have already joined the Faculty, and it would seem to be a move which Bart's would do well to follow.

The Inaugural Lecture was given on December 2nd in the Apothecaries' Hall by Canon E. Raven on "Medicine—Mother of the Sciences". The theme of his talk was that one should not regard the Renaissance as the beginning of scientific medicine, which had its origins very much earlier.

The Faculty has had a most successful beginning, and one hopes that it will flourish in years to come, and succeed in stimulating the interest of medical students in the historical background of their profession (the importance of which was stressed in the Editorial, August 1959).

Council of Europe

In a small leaflet, published to mark their Tenth Anniversary Year, the Council of Europe calls attention to some of its major achievements in the sphere of social welfare. Of medical interest is the agreement in which signatory countries grant to visiting nationals from the other participant countries the same medical and social assistance as their own citizens.

The Council of Europe also offers a num-

ber of Medical Fellowships to qualified practitioners each year in order that they may familiarise themselves with modern techniques in other European countries. Applications should be made via the Public Health authorities.

The most dramatic of the Councils medical achievements has been the establishment of the European Blood Bank which is able to supply human blood or its deriviatives to member countries in case of emergency at a cost to cover only collection, preparation and transport.

U.H. Symphony Orchestra—Concert

The number of people in the audience at the Christmas Concert given by the Hospitals Symphony Orchestra at the Royal Academy on December 5th was not large; and those who missed it must count themselves at a loss, for this was an occasion when the orchestra acquitted itself very favourably of a difficult programme.

Music is always easier to play when you know it, but it is much harder to make a good impression upon an audience when they too, are fully aware of every turn of phrase. Thus it is to the credit of the performers that Brahm's Academic Festival Overture and Tchaikovsky's Piano Concerto No. 1 in B flat minor, were so well received.

The soloist was Joseph Cooper. He played with great skill and musical feeling. It was a pity that, in the second movement, the strings were unable to keep a steady tempo, and one feels that a more definite beat from the conductor, Christopher Finzi, would have given them a better rhythmic hold.

After a long, rather too long, interval Joseph Cooper enchanted everyone with brilliant improvisations, which surely put to shame most of the people who claim to "play by ear".

Rimsky-Korsakof's Capricio Espagnol is a noisy work and this performance was no exception.

The lovely Fantasia on Christmas Carols by Vaughan Williams was sung by the Guy's Hospital Chorus. The justification for ending this concert with a quiet, religious work was in doubt until the magic silence at the end. This was finally broken by applause, but surely that moment was the climax of the evening.

Students' Union Council

At the Annual General Meeting held on Thursday, November 26th, the following officers were elected.

President : Mr. A. H. Hunt (re-elected).
Treasurers: Mr. Tuckwell, Dr. McDonald, Dr. Spencer.
Vice-Presidents : R. M. Hadley, C. G. Beardwell, D. J. P. Gray.
Senior Secretary : B. R. Middleton.
Junior Secretary : C. A. Hood.
Financial Secretary : D. W. Gau.
Publicity Officer : P. G. Cassell.
Preclinical representatives :
1st year : J. R. Thornewill, S. Campbell-Smith.
2nd year : N. Salisbury, R. Brown.
3rd year : T. J. Powles, P. Scriven.
Dental : P. E. Mason.
Women : Miss S. Williams.
Charterhouse Secretary : N. Salisbury.
Clinical Representatives :
Introductory : A. P. Ross.
Clerks and Dressers : A. C. Howes.
M.O.P.'s and S.O.P.'s : C. A. McNeill.
Children and Specials : M. B. J. Bishop.
Midder and Gynae : P. R. H. Evison.
Finalists : G. F. Halls.

The retiring Senior Secretary, D. Julier, in a fine oration, recalled some of the outstanding events of the past year. Achievements which must be recalled in particular are those of the cricketers who made between them five centuries (the last one to be made was as long ago as 1948); the performance of J. Harvey with his total of over 1,000 runs and 40 wickets must surely receive special mention and congratulations.

The women's hockey team have made an equally important contribution in the sporting field by winning the Hospital's Cup for the sixth year in succession; the ladies success in capturing the tennis trophy from St. Mary's Hospital should also receive more than a passing mention, and should suffice to delete from the public mind any notions of the apathy of women medical student's at Bart's.

One regretted the failure of the View Day Ball to do no better than a loss of £150, and the committee are working to avoid a similar disaster next year. The date already chosen is Thursday May 12th, but the place has not yet been specified. It is hoped that it will be supported with more enthusiasm than last time.

The meeting ended with the usual item of "Any Other Business", as a result of which future Council meetings may be attended by any member of the Medical College, although Council Members only may speak and vote. Heated arguments on subjects ranging from the integrity of Bart's men to the cost and quality of food, allowed some of those present to let off a little hot air, but in no way upset the delicate equilibrium of the régime by which we live at Bart's.

Honours

The Council of the Students' Union has approved the award of Honours Colours to

Miss J. Arnold Miss J. Swallow A. Gordon T. Seaton	Tennis
J. D. Davies	Cricket

Fifty Years Ago

The Journal carries an article on Chinese medicine by Surgeon W. Perceval Yetts, R.N. It appears from his observations that the art of the Celestial practitioners reached heights of empiricism to which even the most bizzare forms of Western quackery could not aspire.

The literature is prolific and the first medical treatise (of which a "reprint" appeared in the eighth century A.D.!) is ascribed to the Emperor Awang-ti—circa B.C. 2700. Since then typical examples of Chinese erudition are to be found in the ten volume work on the pulse published in A.D. 290 and the ninety volume system of medicine issued in 1740. Unhappily the size of these works is not justified by the scientific thought or observations they enshrine.

The pulse is of fundamental importance to the Chinese doctor—it is "the sole and complete means of making a physical examination of his patient."

"He has learnt . . . that every organ of the body is fully represented at various points of the two radial pulses, and therefore any malady can be adequately diagnosed from the patients wrists. This being an established fact why search elsewhere, or ask unnecessary questions? He does not."

Physiology and Anatomy are subjects in which the Chinese appeared to be very weak in 1910: "the larynx goes goes through the lungs directly to the heart . . . while the pharynx passes over them to the stomach. The small intestines are connected with the heart and bladder . . . and the large intestines with the lungs."!

The Celestial pharmacopoeia lists no less than 1,575 drugs, most of which make medieval English remedies sound quite commonplace. Toad-spittle cakes appear to have been good antidotes to poisons and dried centipedes a sure cure for syphilis.

Acupuncture was regarded by the Chinese as an universal panacea much as bleeding was in this country. It consisted of puncturing the skin to a greater or lesser depth in carefully selected sites with a series of special needles. The body surface was divided into 367 areas each "related" to some internal organ or structure. The area(s) related to the patient's illness would be carefully selected and the needles driven in with a swift blow from a mallet. " . . . they are frequently made red hot and often left in the skin for days together."

Space considerations preclude further reference to this article which is well worth reading.

Treasure Island at the Mermaid Theatre

Treasure Island conjures up in the mind visions of pirates drunk with the lust for gold, of tall ships with all sail set ploughing through heavy seas, desert islands, treachery, intrigue and death.

To bring all this and much more to the apron stage of the Mermaid Theatre required great skill and ingenuity on the part of Peter Coe, the producer of Stevenson's classic. This he has done admirably assisted by the superb settings of Sean Kerry, who, no doubt inspired by the teaching of the late Frank Lloyd Wright, has produced a set which the actors transform before ones very eyes from the Admiral Benbow Inn, to the foredeck of the Hispaniola, and then to the Island. I feel that much of the success of this production is due to him.

It would, I feel, be imprudent to single out any member of the cast as better than the rest. The production is clearly the result of close team work and is enjoyed by the whole cast and audience.—J. W.

CALENDAR

Wed. 20 Soccer v. Westminister Hospital
Sat. 23 On Duty : Dr. A. W. Spence
Mr. C. Naunton Morgan
Mr. R. A. Bowen
Rugger v. O. Millhillians (H)
Soccer v. Caledonians (H)
Mon. 25 Film Society : Great Expectations
Sat. 30 On Duty : Dr. G. W. Hayward
Mr. A. W. Badenoch
Mr. R. W. Ballantine
Rugger v. Oxford Greyhounds (A)
Soccer v. Worcester College, Oxford (H)

February :

Wed. 2 Rugger v. O. Ruttishians (A)
Sat. 6 On Duty : Dr. E. R. Cullinan
Mr. J. P. Hosford
Mr. C. Langton Hewer
Soccer v. Clare College, Cambridge (H)
Mon. 8 Film Society: The Wild One
Wed. 10 Soccer v. Royal Dental Hospital (H)

HONOURS

Sir James Paterson Ross has been admitted to the honorary fellowship of the Royal Faculty of Physicians and Surgeons of Glasgow.

Mr. J. B. Hume has been elected chairman of the Council for External Students of the University of London for 1959-1960.

Professor K. J. Franklin has been elected a Life Member of the Anatomical Society of Great Britain and Ireland.

The degree of Doctor of the University of Grenoble *honoris causa* has been conferred on Mr. H. J. Seddon.

Dr. E. F. Scowen gave the Imperial Cancer Research Fund Lecture at the Royal College of Surgeons on Tuesday, December 8, on the subject of "Hormone dependant cancer, the present position".

ANNOUNCEMENTS

Engagements

DALE—LIEKER—The engagement is announced between Dr. Colin Clive Hughes Dale and Fraulein Almut Sophia Thea Amalie Lieker.

HOOD—CLAIR—The engagement is announced between Christopher Allen Hood and Alison Julia Annabel Clair.

WHITTLE—SUDGEN—The engagement is announced between Dr. John Whittle and Pamela Sugden.

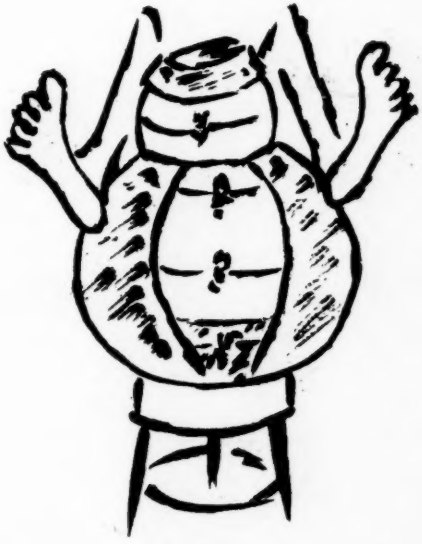
Deaths

HUGHES—November 24th, Gerald Stephen Hughes, F.R.C.S., aged 81. Qualified 1902.

MACKAY-ROSS—On November 24, Dr. John Andrew Mackay-Ross. Qualified 1923.

VON BERGEN—On November 26, Dr. Carl von Bergen. Qualified 1899.

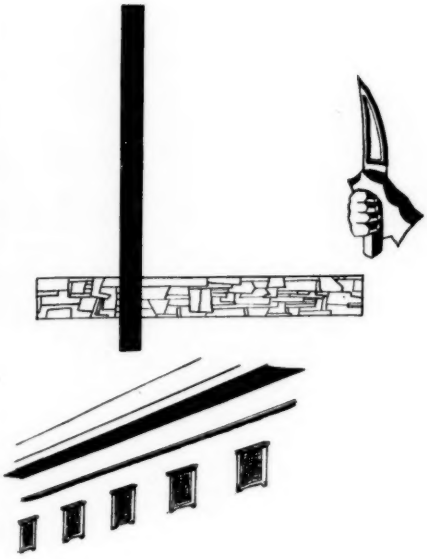
WILSON—On November 14, Harold Wilson, F.R.C.S., aged 79. Qualified 1903.



" Now lets get to the bottom of all this ! "

Cover Designs

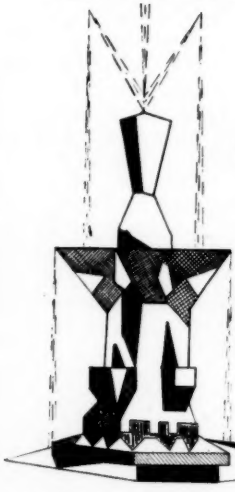
ST. BARTHOLOMEW'S
HOSPITAL JOURNAL



ST. BARTHOLOMEW'S
HOSPITAL JOURNAL

VOL LXIII DECEMBER 1959 No.12

ST. BARTHOLOMEW'S
HOSPITAL
JOURNAL



VOL LXIII. No 9 SEPTEMBER 1959.

Journal Cover Competition

Rather more than a dozen entries were received of varying artistic merit. It was interesting to see how often the designs were inspired by what a member of the staff was recently heard to describe as " That Victorian Monstrosity "—namely, the Fountain !

The Publications Committee decided that no single entry was suitable for use on the Journal cover, but that a selection of four should be published, the artists concerned receiving half a guinea consolation prizes.

Artists : 1. Miss E. Rees (Hill End)
2. B. McGrath
3. R. Church
4. C. A. Hood

Journal Staff

A. J. B. Missen succeeds P. J. Watkins as Editor.

H. White has been appointed Assistant Editor.

A Fall's a Hawful Thing

by GEOFFREY SPARROW

To most foxhunters the idea of a fall is scarcely entertained; but to me, whose duty it is to retrieve the body, the possibility is a very real thing, for accidents are by no means rare.

Here is what John Jorrocks says about it: " True, that in 'unting men will roll about—but so they will on the road; and I'd raythe have two bumps in a field than one on a pike. . . . Still, a fall's a hawful thing. Fancy a great sixteen 'and 'oss lyin' on one like a blanket, or sitting with his monstrous hemispheres on one's chest, sendin' one's werry soul out o' one's nostrils! Dreadful thought. Vere's the brandy ? "

But let us take comfort, for comparatively few accidents are serious and quite a large proportion occur on the road home or when a horse puts his foot in a hole, and may often, with a little care and attention, be avoided: such falls are nearly always worse than those at a fence, where the horse usually makes some effort at recovery instead of dropping like a stone.

But don't worry, for there's more joy than jeopardy in hunting, and as J.J. said: " Every man wot prefers his 'ealth to the interests o' the seidlitz-powder makers will get as much 'unting as ever he can afore Christmas."

A doctor in the hunting field should never look conspicuous: he should wear a black coat, and I have only known one to ride in pink. Grey or odd-coloured horses should be avoided and a nice quiet bay or brown will suit his purpose and make a less conspicuous target; for some people will seek him out and talk shop to him and that is really what he comes out to be rid of, if only for an hour or two.

A doctor was once asked by a lady to come and see some fellows in trouble, and when he arrived on the scene, there they were, five or six of them, laid side by side: she was very shocked when he told her that he'd come out for a day's hunting and not as a mortuary attendant.

An old sporting doctor once told me how he was out one day, and just as hounds were getting away on their fox, a fat, wheezy patient galloped up behind and shouted, " I say, doctor, what shall I do with my throat? "—and my friend called back over his shoulder, " Cut it! " That was that! However, I don't want to seem cynical, for doctors generally, and this one in particular, are only too keen to help anyone in real trouble. It is an unwritten law that while a doctor is attending a case, his horse should not be allowed to go loose: this seems pretty obvious, but I have had mine let go before now.

It's a responsible task to look after a bad fall, and none too easy to make a diagnosis through layers of thick Melton cloth and flannel waistcoats. I always think, if it's bad enough to stop me, it's bad enough to be sent home: and in any case of doubt, home by car is the order of the day.

A hurdle or Sussex gate makes an efficient stretcher for more serious cases where it is either impossible or inadvisable to walk.

At least four people will be required, for it's heavy work and the scene of the accident may be some fields away from the nearest point to which the car can be brought. It is best to lay a number of coats both above and beneath the patient, for shock is always attended by cold and worsened by it.

In fracture cases, which are fortunately of rare occurrence, splints can usually be improvised, and one or two slats from a Sussex gate will make efficient ones, while stock ties and handkerchiefs will serve as bandages. I remember treating a very severe case of haemorrhage when a horse's pastern was cut by glass. I had an awful job to stop it and used about six ties from as many ladies present, and not until we had got the horse away in a box did I discover that I was the only person left immaculate! I suppose it was one of my privileges, though I did not realise it at the time.

Cases of concussion should not be given any stimulant, and together with those where there is any question of abdominal injury should invariably be sent home or to hospital by car. Fractured collar bones and ribs, an occasional dislocated shoulder, are fairly common and will all call for medical aid. The popular idea that the doctor will sink his head between his shoulders, go stone deaf, and gallop in the opposite direction as if the very devil were after him, is quite absurd. Doctors don't just gallop on shouting " You're all right " as soon as ever they see anyone " base over apex " in the ditch.

There are several ladies in our hunt who are both willing and capable of rendering first aid, and to these every hunting doctor would offer his sincere thanks (and an honorary degree if he could confer it). It's a good plan in cases of collar bone, or injury to the arm or shoulder, to put the arm on the affected side in a short arm sling made out of a stock tie. Fractured ribs, too, unless there are a number of them, are well relieved by a couple of bandages round the chest, not applied too tight.

Dislocation of the shoulder can sometimes be reduced if there is a doctor available at once.

When it is the doctor himself who is involved it's a little more tricky, and the old slogan " Physician, heal thyself " is not of much use, especially if he has concussion. Concussed people are always quarrelsome and argumentative, call for their horses, and insist on getting up and going on. I remember some years ago that I got a proper crack on the head and carried on rather better than usual; in fact I jumped a high flight of rails that was quite beyond my usual form. All the same, it is a very risky thing to do, and such cases should, without exception, be evacuated.

I think no one will deny that there is much altruism among doctors, and the *chevalier d'industrie*, or the man who makes profitable work for himself, is the rare exception, though I knew of a doctor once who peppered his host out shooting, spent the next week extracting the pellets, and then sent him the bill! None the less, I must confess that I have had many good hunts on horses belonging to patients whom I have previously ordered to keep to their beds; but here again is one of our rare privileges, though I feel sure some people thought I did it on purpose! We must get a break sometimes for there is no profession or calling in the world more obstructive than medicine to foxhunting. Great care is required in so arranging the work as to allow of *one* day's hunting each week and even then something is quite likely to turn up at the last moment.

I sometimes found myself with a number of operations to do before driving down to meet my horse and it was quite easy to leave something behind in the fury of the moment: I am not thinking of a swab inside a patient, but one's top hat or something like that. Myself, I have been lucky in that I never felt tired after hunting and have often had to do emergency operations on my return. I remember that on one occasion I had had three falls.

I have always found that the people one helps are very grateful for what is done, and the most appreciative expression of gratitude that I received was a case of whisky. I had had to wade into a brook and recover a lady who had been completely under water and had come up under the overhanging banks and alder roots. I think that without a doubt she would have been drowned if no one had been near. She sent a message afterwards to say that the whisky was meant for me to mix with the water in my boots.

And now, having harrowed the feelings of my readers (if any of them have stayed the course) I would say, " If you fall, keep a hold of your horse, but few things are worse than a sharp burst in top boots! But don't worry unduly, for it may never happen."

Research at Bart's

DEPARTMENT OF PHYSIOLOGY, II

Response of Human Tissues

A study of the variation in the response of human tissues to the same form of stimulus at different ages is being undertaken by Dr. F. J. Aumonier in collaboration with the Dental Department. The tissue selected for study is the epithelium of the human gum. This is a stratified squamous epithelium with a slight amount of cornification. It had already been established that the stimulus of brushing the gums with a hard brush did produce an increase in the thickness of the cornified layer, and it was decided to see whether this response varied in different age groups.

In the series of patients studied a biopsy of the gum was taken at the first attendance, the patient was then instructed to brush the gums vigorously according to a standard ritual, and a suitable brush and supply of dentifrice was provided. After one month the patient returned and a further biopsy was taken; this was repeated until after 3 months treatment there was a total of four biopsies from each patient. Unfortunately many patients did not keep the full number of appointments, so that the total number of biopsy specimens in the third and fourth groups was much less than in the first and second.

The specimens were fixed in formalin to which a trace of carmine had been added; this stained the epithelium red and was of great help in orienting the specimen during embedding. Sections were cut at a thickness of 5-8 μ and stained in haematoxylin and eosin. The thickness of the cornified layer was measured with a screw micrometer eyepiece using an oil immersion objective.

At the present time 93 patients have been investigated and the results treated statistically. These have been divided into two groups (i) up to 30 years of age (48 cases); (ii) 31 years and older (45 cases). It was noticed that in group (i) the initial thickness of the cornified layer was 7.8 μ and in group (ii) 9.4 μ. After 1 month the figures were group (i) 11.6 μ, group (ii) 12.0 μ. This difference was negligible, but if the gain in thickness is expressed as a percentage gain on the starting thickness, then group (i) gained 48 per cent and group (ii) only 27.5 per cent. After two months treatment the figures became: group (i) 12.0 μ (53.8 per cent), group (ii) 14.2 μ (51.0 per cent). Finally after 3 months group (i) were 12.8 μ (64.1 per cent) and group (ii) were 14.6 μ (55.3 per cent). It is concluded from these results that brushing the gums is followed by an increase in thickness of the cornified layer and furthermore this response is more rapid in the younger age groups. What is interesting, however, is that the final thickness of the cornified layer is greater in the older subjects. It is hoped to continue the work until 50 patients in each of four or five groups have been studied. These groups will be on a decade basis, 11-20, 21-30 etc.

Pulmonary reflexes

Reflexes arising from the lungs are being studied by Dr. J. G. Widdicombe. When the lungs are inflated afferent end-organs in them are excited, the vagus nerves transmit impulses to the respiratory centres, and inspiration is inhibited; this Hering-Breuer inflation reflex has been known for over 90 years, but its role in physiological or pathological conditions is little understood.

It has been shown (with Dr. R. Marshall) that congestion of the lungs sensitizes the pulmonary stretch receptors, which would make breathing more rapid and shallow for the same ventilation rate; this is advantageous since congestion causes stiffening of the lungs and large tidal volumes would require undue muscular work to stretch the lungs. Bronchospasm slows the respiratory cycle: the lungs inflate more slowly since airflow into them is hampered, the discharge of the pulmonary stretch receptors is retarded, the inhibition of the inspiratory centre is delayed, and inspiration is prolonged. This, too, is of advantage to the animal since rapid breathing during bronchospasm would require disproportionate muscular work to propel air through the constricted airways. The Hering-Breuer inflation reflex is, therefore, a factor in modifying the respiratory cycle to the mechanical state of the lungs to avoid inefficiency in the work of the respiratory muscles.

The experiments on pulmonary stretch receptors have been done on cats, and rabbits, but similar mechanisms exist in all mammalian species investigated (with Dr.

M. L. Crosfill). For example the mouse, breathing at 150 cycles per minute, might be expected to perform undue muscular work to produce the relatively very rapid rates of airflow associated with this frequency. However, measurement of the resistance to airflow in the air-passages of mice shows that it is relatively (on a lung weight-to-weight basis) far lower than that of larger mammals, so that mice can breathe rapidly without wasted effort. Animals of each of the species examined (mouse, rat, guinea-pig, rabbit, cat, dog, monkey and man) adopt patterns of breathing which are mechanically most efficient for the ventilation rate required. If they were to deviate from these patterns respiration would become inefficient in the sense that the respiratory muscles would use extra, wasted energy without increasing the alveolar ventilation.

The pulmonary stretch receptors probably lie in the smooth muscle of the air-passages, and it is natural to ask if they reflexly influence bronchial tone as well as the muscles of breathing. The method of testing this has been to record activity in single nerve fibres running into the lungs, the impulses probably being bronchoconstrictor. Inflation of the lungs reflexly inhibits discharge in these nerves, possibly via the pulmonary stretch receptors, so that the increase in bronchial diameter during inflation is partly "active" as well as passive due to the mechanical stretch of the bronchi. The pulmonary efferent fibres are vigorously stimulated by coughing due either to a mechanical stimulus in the large airways, or to inhalation of an irritant gas. The complicated interaction of reflexes arising in the lungs and influencing both respiratory muscles and the tone of pulmonary smooth muscle is being further studied.

Renal function

Two studies connected with renal function are being carried out by Dr. Elisabeth Ullmann. Concerning the first, it has been found that breathing against a small external airway resistance, such as a respiratory valve, leads to an increase in the excretion of water. The rise of urine flow is most marked in recumbent subjects, and in the upright posture after drinking a small volume of water. Polyuria is also found during hypernoea caused by CO_2 inhalation, hypoxia, or voluntary effort, and has been shown by others to accompany negative pressure breathing. It is probable, but not yet certain, that the excretory changes are initiated by the changes in intrathoracic pressure associated with altered respiration. It is thought that when the respiratory pump increases the inflow of blood into the chest nervous receptors somewhere in the thoracic vascular bed are stimulated to discharge afferent impulses which reflexly inhibit the release of antidiuretic hormone. Findings up to date are consistent with this hypothesis. Work in progress is concerned with testing it more rigorously in experimental animals, especially as regards the role of the neurohypophysis. The problem itself is of interest because it has been suggested that the respiratory changes accidentally activate a mechanism normally concerned with the regulation of the volume of body water. If this should turn out to be the case certain characteristics of the phenomenon suggest that the mechanism might operate by adjusting the sensitivity of the osmoreceptors.

The second problem concerns the localization of function in the renal tubule. Certain results obtained with the 'stop-flow' method for the localisation of function in the renal tubule were interpreted by Wilde and his co-workers (*Amer. J. Physiol., 195,* 549, 1958) as showing (1) that sodium reabsorption is an active process in the distal tubule but that in the proximal tubule it is entirely passive, depending only on the osmotic pressure difference between tubular fluid and post-glomerular blood and the concomitant fluid requirement of actively reabsorbed materials like glucose; (2) that even when ureter pressure during occlusion has become equal to the net filtration pressure some filtration continues, replacing fluid reabsorbed from the nephron. Both conclusions depend on the validity of the assumption that after the first 60-90 seconds of occlusion the net filtration pressure is nil. Work begun in co-operation with Dr. M. G. Taylor has shown that even at very high initial urine flow the pressure in the ureter during occlusion continues to rise for a much longer time than was supposed by Wilde *et al.*, and that it may continue to climb slowly for more than 10 minutes. If substances like creatinine, inulin or sodium thiosulphate are suddenly injected intravenously during occlusion and the concentration changes in the plasma are followed it is possible to estimate directly from the amount found in the 'occluded' urine the mean rate of glomerular filtration during the interval following injection. This

method is being used at present to determine (a) the total volume of new filtrate entering the tubule during the entire period of occlusion; (b) whether or not measurable filtration occurs after the ureter pressure has attained 95 per cent of its final height and if so (c) whether the volume filtered varies with the concentration of substances like glucose which are actively reabsorbed from the proximal tubule.

Humoral transmission

Mr. B. N. Davies is studying the release of the chemical transmitter at sympathetic post-ganglionic nerve endings. When sympathetic nerves are stimulated, a chemical transmitter is released at the nerve endings and this acts on the smooth muscle or gland and causes the sympathetic response. Since about 1922 it has been known that this chemical transmitter is an adrenaline-like substance, and recently it has been shown to be noradrenaline. Now that the nature of the chemical is known it is possible to make a quantitative study of the release of the sympathetic transmitter. Many organs have a rich sympathetic innervation, e.g. the intestines, the liver, the spleen and the ear, and noradrenaline has been detected in the venous blood from all these organs after stimulation of their sympathetic nerves. The spleen however is the only organ which provides enough noradrenaline to enable quantitative work to be carried out. This work was started 2½ years ago in collaboration with Professor Sir Lindor Brown at University College, London.

The method which has been used is very briefly as follows: A cat is anaesthetized with chloralose and electrodes are put on the post-ganglionic splenic nerves. The superior mesenteric vein is cannulated, and then by occluding the portal vein, the venous blood from the spleen can be collected during and for a few seconds after a period of stimulation. The vasopressor activity of the blood sample is then assayed as noradrenaline on the blood pressure of the pithed rat, and the total amount of noradrenaline appearing in the sample as a result of the stimulation is calculated.

This technique is being used to investigate one feature of the action of the sympathetic nervous system. Since the beginning of this century it has been noticed that sympathetic effects, such as contraction of the nictitating membrane or contraction of the spleen, are not maintained for the duration of long periods of stimulation. This phenomenon has been called 'fatigue' and a number of different causes have been suggested. One of them is the failure of the chemical transmission mechanism, and Mr. Davies is trying to find out if the amount of noradrenaline released by the sympathetic nerves decreases as 'fatigue' occurs. There are many complications to this work, the chief one being the fact that the amount of transmitter appearing in the venous blood is quite different from the amount of transmitter actually released. This is because some of the transmitter combines with the 'receptors' and only the overflow appears in the venous blood. One way of overcoming this difficulty is to use the adrenergic blocking agent Dibenyline, which is said to occupy all the 'receptors' and prevent any combination of the transmitter with them. The result is that all the transmitter released by the nerve endings appears in the venous blood.

Results so far suggest that the amount of transmitter appearing in the venous blood does decrease during a long period of stimulation, but it is not yet certain whether this is due to decreased liberation at the sympathetic nerve endings or to some other factor.

Radiobiology

A study of the long term effects of irradiation is being carried out by Dr. Patricia J. Lindop in collaboration with Professor J. Rotblat and the Department of Physics. Some of this work has been described previously in the *St. Bartholomew's Hospital Journal* (September 1959).

Mice are used for longterm studies of the effect of a single whole body exposure to 15 MeV. X-rays. 15,000 mice are under study, kept in a carefully controlled and isolated colony in the Animal House. Each mouse is identified on entry into an experiment, and has a card for recording events throughout its life and notes made at post mortem examination.

Both physiological and pathological observations are made, on groups of mice exposed to a range of doses, at different ages. One interesting longterm effect has been the increase in body weight of mice exposed to doses under 200 r, compared with the persistent decrease in weight shown by mice exposed over 200 r.

This apparently 'stimulating' effect of doses under 200r produces gross mice, weighing up to 70 gram (normal average

weight is 30 gram), due to the abnormal deposition of fat over the shoulder and pelvic girdles, and in a peritoneal apron. It persists in mice surviving up to 900 days after irradiation, and does not seem to be the result of thyroid depression, increased appetite, or decreased body activity. Investigations are now being carried out to find out the role of the pituitary in producing this picture.

A second problem being investigated is the role of oxygen in influencing the effects of radiation. When a system is irradiated in the absence of oxygen, it is apparentty 'protected' from the effects of exposure. The degree of protection depends on the oxygen tension in the tissue exposed, its rate of utilization of oxygen, and the dose rate of the radiations. These three variables are being measured and altered in different experiments in an investigation of the acute effects.

Interstitial oxygen tension is being measured before and during irradiation, when the animals are breathing different gas mixtures. These methods may be used later to measure the oxygen tension inside tumours, where maximum oxygenation is needed for full radiotherapeutic effect.

Another experiment is aimed at determining the latent period between irradiation and the occurrence of damage. This is done by exposing mice to a small dose of radiation at one age and then measuring their sensitivity to radiation at a later age.

The most important investigations concerning the variation of radio-sensitivity with age, the shortening of lifespan as a function of dose, and the effects of parent irradiation on progeny down to the third generation, have been described in the report of the Department of Physics published in the September issue of the *Journal*.

Literature covering some of the work described in this article may be found in the selected references given below.

References

WIDDICOMBE, J. G. (1957) "Nervous activity in pulmonary efferent (bronchoconstrictor) fibres." *J. Physiol.*, 135, 53*P*.

MARSHALL, R. and WIDDICOMBE, J. G. (1958 "The weakness of the Hering-Breuer reflexes in man." *J. Physiol.*, 140, 36*P*.

MARSHALL, R. and WIDDICOMBE, J. G. (1958) "The activity of pulmonary stretch receptors during congestion of the lungs." *Quart. J. exp. Physiol.*, 43, 320.

CURRIE, J. C. M. and ULLMAN, ELISABETH (1955) "Hyperpnoea and renal water excretion." *J. Physiol.*, 129, 73-74*P*.

BROWN, G. L., DAVIES, B. N. and GILLESPIE, J. S. (1958) "The release of chemical transmitter from the sympathetic nerves of the intestine of the cat." *J. Physiol.*, 143, 41-54.

LINDOP, P. J. and ROTBLAT, J. (1959) "Ageing effects of ionizing radiations." *Progress in Nuclear Energy VI*, 2, 58-68.

LINDOP, P. J. and ROTBLAT, J. (1959) "The effect of age on the acute and longterm response to irradiation." *Gerontologia* (in press).

UNIVERSITY OF LONDON

Final M.B., B.S. Examination October 1959

Honours

Tooby, D. J. (Distinguished in Surgery)

Pass

Bonner-Morgan, R. P.
Brookes, B. M.
Burbridge, B.
Chambers, R. J.
Cox, T. A. R.
Dobson, J. L. C.
Durrant, K. R.
Dymond, G. S.
Fox, G. C.
Gould, A. M.
Hudson, M. J. K.
Marshall, R. D.
O'Hanlon, N. M. P.
Peebles, D. J.
Plant, J. D. C.
Roberts, C. P.
Robinson, J. S.
Roden, A. T.
Stubbings, R.
Sugden, K. J.
Thomas, B.
Townsend, J.
Warrander, A.
Winch, R. D.

Supplementary Pass List

Part I

Abell, J. D.
Alabi, G. O.
Almeyda, J. J. R.
Arnold, J.
Birt, R. C.
Booth, D.
Cassell, P. G.
Constable, M. D.
Eddy, J. D.
Fasan, P. O.
Garrod , J. A.
Gletsu, A.
Gould, S. E.
Gray, W. R.
Hadley, R. M.
Halls, G. J.
Humphreys, D. M.
Julier, D. L.
Makin, E. J. B.
Matthews, A. W.
Milburn, F. A.
Pettavel, J. A. P.
Ponnampalam, M. S.
Pope, J. A. ff.
Russell, Z. A.
Smith, P.
Stalder, G. P. M.
Tabert, J. E. K.
Tufft, I. J.
Vollum, D. I.
Weaver, P. C.
Willoughby, R. A. G. d'E.

Part II

Collier, B. R.
Davies, G.
Harris, D. M.
John, R. W.
Juniper, C. P.

Part III

Berry, W. H. C.
Davies, G.
Juniper, C. P.
Muzio, D. M.
Swallow, J.
Thomson, R. G. N.
Willioughby, R. A. G. d'E

Part IV

Alabi, G. O.
Collier, B. R.
Davies, G.
Gould, W. A.
Juniper, C. P.
Muzio, D. M.
Swallow, J.
Thompson, A. J.
Thomson, R. G. N.

The Dean Reports . . .

At this time of the year it falls to the lot of the Dean to write the official Annual Report of the College, for publication with the Annual Accounts. This, of course, is retrospecpective and not speculative. It seeks to reveal the good and may conceal, by omission, the bad. It is reproduced below.

Everyone working at the College today knows, however, that much more has happened and is going to happen shortly. Twenty students from the Royal Dental Hospital School of Dental Surgery, have started for the Second B.D.S. Course. Last summer term the vanguard arrived in the form of 40 third and fourth year dental students for the Third B.D.S. Pharmacology Course, which is attended for one half day a week. The old Zoology Department has been altered to provide additional teaching and staff accommodation for Anatomy. The Student Health Service has been re-sited on this same floor in the Warden's House. Zoology staff and teaching has been crowded into the Physiology and Histology floors in the new buildings, and space is short. To move any department is rather like moving a circus these days. One of the big problems was to provide an aviary !

Plans are going ahead for an early start on the final building, on the site of the old Great Hall at Charterhouse. At long last there will be a new library, worthy of the College, to replace the "pre-fab". A staff common room (with pantry !) will help to break interdepartmental barriers and improve facilities for the meetings of learned societies, which are now as prevalent as the papules of chicken-pox. These meetings, together with student activities such as the Film Society, have resulted in very full use of the new lecture theatres. Zoology and Physics Departments will each have a floor for staff rooms and departmental research. Space will be available to rehouse the electron microscope at present in the old lecture theatre in the "physics tower". The third new floor will be devoted to an entirely new department of Medical Radiobiology, for which the University has established a professorial Chair. Bart's has been for several decades a leading centre for the use of radiation in therapy. The development of new techniques, together with the tremendous general interest in the biological effects of radioactivity, demands increased facilities for teaching and fundamental research. Science postgraduate students and industrial workers are already attending courses in radiation physics and the associated hazards, and the University intends to establish a diploma to cover radiation hazards and protection and a new degree in radiobiology.

A further floor is being added to provide a permanent home for the Medical Research Council Atmospheric Pollution Research Group, which has spent its life so far in the Dunn Laboratory and adjacent ward accommodation. Thus the Medical Unit will have research space restored.

Sketch plans have been drawn for a major extension to College Hall to provide at least 60 more bedrooms.

When all this is achieved, there remains still further development of considerable urgency—Students' Union facilities, including a new gymnasium, assembly hall, squash courts and rowing tank. Is it too ambitious to hope for a covered car park where the less athletic can pursue the fascinating discipline of car cannibalisation—perhaps even a Chair of automotive pathology ?

What of the Clinical Side ? The Library has changed its face—some of the die-hard critics are disappointed. The rostrum has gone but the clock remains. The balcony at the south end has been brought forward and the offices placed beneath. Down in the bowels of the earth a high arched catacomb has been rehabilitated into a book store, and squatters rights have gained a lodging place for the *Journal* office. Even the clinical lecture theatre has had a face lift and a false ceiling has been put in to improve the acoustics. Critics will be pleased to know that there is also a clock, visible to the lecturer only.

After many months of experimental research in the animal operating unit at Charterhouse, the Department of Thoracic Surgery has been able to establish successfully at Hill End the pump oxygenator for cardiac surgery.

View day visitors will be surprised to see the new 12 storey red brick nurses home, and the new clinical block on the East side of Little Britain will, we hope, be open in June. In addition to wards and theatres for special surgical departments, provision has been made for a self-contained cardiological

Work in progress on the new "L" Block

clinic and teaching room. A very large sum of money is being spent on modernising the basement theatre in the East Wing and orthopaedic wards are being located in the West Wing. Old Bart's men will be interested to know that there will then be a ring tunnel connecting all the blocks. The Square will no longer witness the familiar sight of the bed, the red rubber sheets, and the umbrellas on routine inter-departmental pilgrimages in the rain.

The College has received a most generous benefaction from Messrs. Eli Liely &Co. Ltd. (Basingstoke) of £17,500 to establish a seven year Bacteriology Research Fellowship. It is proposed also to establish a Virology Unit in the Bacteriology Department, and College funds have been set apart for that purpose.

The Curriculum is under active discussion at all levels in the University. However abortive may be attempts at radical revision, at least we will be able very soon to weld "special department" teaching far more than has been possible into the general medical and surgical periods. Demands for the services of the clinical staff, the continued high prestige of the nursing at Bart's, and the ever widening scope of medicine and surgery have overloaded the 800 beds to breaking point. Without expansion the Hospital cannot provide for the increasing daily and residential population of the City, for the needs of the staff's research facilities, nor even for the pursuit of their routine work at the highest possible level. Air travel, railway electrification, and an indomitable faith in the teaching hospitals of London bring British citizens back to the centre in times of crisis. The needs of these great institutions must not—in fact cannot—be equated with the parochial needs of a Hospital service based on population statistics. On that point pivots the whole future of our great Hospital and heritage. The Medical College has enjoyed the greatest possible help from its sister organisation, the "Hospital", but both are threatened still by the ogre of political determination. What will 1960 bring forth ? Your guess is as good as mine, but the eggs are in the incubator! Will you help to keep them warm ?

Believing that reason and need will triumph and that Hospital expansion will be possible, the College intends to press on with its own programme. There is an immediate need for £26,000 from generous friends to enable a start to be made on the Charterhouse Library Block—£100,000 will be needed to restore the endowment research

and maintenance fund. Covenant forms will gladly be sent to those in a position to help over a longer period of time.

Finally, an "open day" is being arranged for Friday June 10th, for the pre-clinical part of the College. This will enable students to show parents and friends the great assets of the College, and perhaps something of the challenge and scope of basic science in relation to medicine. On Saturday, June 11th, it is hoped to welcome back old Bart's men in practice for a day of sight-seeing and clinical demonstrations. Interested readers may send in their names now for this latter event if they wish to be early in the queue.

If the Editor permits, the Dean will report again in due course!

(The Editor permits!!)

THE MEDICAL COLLEGE OF ST. BARTHOLOMEW'S HOSPITAL

ANNUAL REPORT OF THE COLLEGE COUNCIL

For the Year ended July 31, 1959

The Council of the Medical College presents herewith its Report to the College Governors on the work of the Medical College for the year ended July 31, 1959. The number of students attending during the year was 706, classified as shown in the accompanying table.

The number of new full-time students entering in the year ending in October 1958 was 121, compared with 136 the previous year. They had been selected from 1,253 applicants, of whom 334 were interviewed.

The retirement from the clinical staff of Dr. Bourne, Dr. Strauss, Mr. Hume, Mr. Corbett and Mr. Higgs, and of Professor Franklin from the Chair of Physiology, has meant a very material change in the College. Professor M. deBurgh Daly has been appointed to the Chair of Physiology, and Dr. A. G. Spencer to the Readership in Medicine. The title of Professor Emeritus of Physiology in the University of London has been conferred on Professor Franklin.

	This year		Last year	
	Men	Women	Men	Women
A. Full-time Students				
(a) Graduates engaged in Research work or some special course	15	4	13	2
(b) Undergraduates reading for a University Degree	453	97-569	429	89-533
B. Part-time Students				
(a) Graduates engaged in Research work ...	66	6	60	11
(b) Undergraduates reading for a University Degree	48	10	4	0
(c) Occasional	6	1-137	19	1- 95
		706		628

Dr. T. O. McKane was appointed to the post of Adviser in General Practice, made possible by a grant from Messrs. Merck, Sharp & Dohme Ltd. The College acknowledges with gratitude the assistance given to research by further grants from the U.S.A.A.F. for the Pharmacology Department and from the British Empire Cancer Campaign for research on late effects of radiations.

Two B.Sc. students have been able to visit the U.S.A. for research studies through the generosity of Messrs. Lloyd-Hamol and Professor Arnold Schein, and the Medical College has admitted for periods of clinical study five medical students from Medical Schools of the U.S.A.

A course in Radiation Physics for the M.Sc Degree has been held in conjunction with the Middlesex Hospital Medical School.

The following special lectures have been delivered in the Medical College:

Special University Lectures: Professor J. Rotblat and Dr. D. A. McDonald.

Annual Pfizer Lecture (College of General Practitioners): Dr. E. F. Scowen.

Course of Lectures on Air Pollution (University Department of Extra-Mural Studies).

Dr. C. Langton Hewer delivered the Frederic Hewitt Lecture (Royal College of Surgeons of England, Faculty of Anaesthetists), and Mr. G. J. Hadfield was elected Hunterian Professor, Royal College of Surgeons of England.

Dr. Charles F. Harris was again elected Vice-Chancellor of the University of London, and Mr J. B. Hume Chairman of Council for External Students, University of London.

Professor Walter McKenzie, University of Alberta, on the occasion of his visit as Temporary Director of the Surgical Professorial Unit had the honour to be elected Perpetual Student.

Meetings and conferences of the following societies and associations have been held in College premises:

British Society for Research on Ageing.

Royal Society of Medicine: Sections of Pathology, and Urology.

Osler Club.

South-East Metropolitan Regional Tuberculosis and the North-East Metropolitan Regional Thoracic Societies.

Association of Surgeons.

American Travelling Orthopaedic Fellows.

International meeting of British Medical Students' Association.

Improvement in the College's financial position was achieved by the measures outlined in the Annual Report 1958. Rotating Junior Registrar

Clinical Assistantships in preparation for general practice have been restored, and certain research assistantships have again been filled. The Research Committee has been reconstituted in conjunction with the Medical Council of the Hospital.

The College has, at the request of the University, agreed to admit pre-medical and pre-clinical students from the Royal Dental Hospital School of Dental Surgery, and this has meant certain structural alterations and re-arrangement of teaching facilities.

The following deaths are recorded with regret: Mr. W. L. Wood (College Governor); Dr. P. Hamill (Lecturer in Pharmacology until 1948); Mr. J. R. Elliott (Hospital Pharmacist and Lecturer in Practical Pharmacy); and Mr. H. K. Eaton Ostle (served on College Council as a representative of the Hospital Governors from October 1943, and a member of the Executive Committee from October 1944 to January 1951).

A Case of Acalculia

by G. L. Scott

Lesions of the parietal lobes are notorious for the complex symptomatology to which they may give rise. The following case, of a parietal lobe tumour, is interesting in that, in the early stages at least, only one aspect of behaviour was notably affected, namely the ability to calculate. Although, as the growth expanded, this symptom very quickly became obscured in a more typical parietal lobe syndrome, it provides an instructive case for a discussion of acalculia.

HISTORY

Mr. S. was referred to Dr. Aldren Turner by his general practitioner complaining of general mental confusion and difficulty with calculation. He was aged sixty-one, and by profession an accountant working with a firm of engineers. He was admitted to Stanmore Ward in January 1959, where he was fully investigated, and a diagnosis of left parietal glioma was made. His condition rapidly deteriorated, he became semi-comatose and died at the end of February.

Three months previous to admission the patient had noticed a change in vision on his right side, and frequently missed objects in the right half of his visual field. At the same time he became aware of an increasing disability to calculate, which seriously affected his work as an accountant. He described the disability as a loss of understanding of the significance of figures and mathematical symbols. Procedures depending on rote memory alone were less impaired, thus multiplication tables were readily remembered and used. Later he noticed other disabilities, affecting writing and complex skills such as typing and piano-playing. Formerly he had been a proficient pianist and typist but both these skills were affected; one of the commonest difficulties was transposition of the left and right sides of the keyboard. He had been strongly right-handed throughout his life.

EXAMINATION

General physical examination revealed no abnormal physical signs. The B.P. was 115/80. The principal neurological findings were as follows: The fundi showed a mild bilateral papilloedema, and there was a right homonymous hemianopia. The tendon reflexes, for both arm and leg, were slightly increased on the right side and the plantar reflexes were flexor. Sensation was not impaired except for reduced vibration sense in the right leg. Co-ordination was good but, stereognosis poor.

INVESTIGATIONS

EEG. Left temporal leads showed reduced alpha and fast activity, and in its place a persistent slow rhythm of $1\frac{1}{2}$-5 cycles per sec. originating from a left parietal focus. The whole record was strongly in favour of an acquired lesion in the Lt. temporo-parietal region.

CAROTID ANGIOGRAPHY

There was a general displacement and stretching of the cerebral vessels to the right and a group of pathological veins in the left temporo-parietal region. The pictures were strongly suggestive of a glioma in the left parietal region.

PSYCHOLOGICAL INVESTIGATION

When he was first admitted the patient seemed slightly confused, but he was communicative, relatively coherent and his behaviour was rational.

Speech. Expressive speech was little impaired; sentences were syntactically and semantically correct, but there was slight nominal aphasia and the patient often resorted to periphrasis when he was unable to find the correct word.

Comprehension. There was minimal impairment of verbal communication.

Reading. Individual letters and words were accurately recognised but there was poor comprehension of connected written material.

Writing. Spontaneous writing was grossly impaired. Letters were badly formed, and in many cases reversed, words were wrongly spelt and wrongly used. Often the patient would find that he had written a different word from that which he had intended. Sentences were poorly constructed and meaningless, and he was unable to read that which he had written. Writing from copying and dictation showed the same faults.

Calculation. All but the simplest mental calculations were impossible. To simple multiplication sums such as 5 x 6, or 7 x 4, he replied correctly but simple addition and subtraction were grossly impaired. When asked to work sums out on paper, he was unable to form the figures correctly and did not align them in correct columns, thus tens were placed under units and so on.

Copying and drawing. Both were poor, and below the standard of the average adult. (This particular patient claimed to have drawn with fair proficiency before his illness, having at one time been trained in technical drawing.) Lines did not meet, and drawings were crowded on to the left hand side of the paper.

Visual perception. There was little difficulty in ordinary perception, objects were clearly recognised, even though, in some cases they could not be named correctly. Space and depth perception were normal, colours were named accurately, but the interpretation of pictures was poor, and the picture was not seen as a whole.

Spatial orintation. There was some confusion of right and left; this, apparently, had been most marked in piano-playing and typing. There was confusion over parts of the body, the patient being unable to respond to simple commands such as—put your left hand on your right ear. There was also a mild degree of finger agnosia—that is an inability to recognise and name either his own fingers or those of the examiner when they are spread before him.

In summary then, one can say that this is a case of dysphasia and other kindred symbolic disorders, resulting from a left-sided parietal lobe lesion in a right-handed man, the chief disorders being of reading, writing, calculation, and right left disorientation.

DISCUSSION

The Parietal lobes. (Comparative morphology and symptomatology.)

The region of the cerebral hemispheres known as the parietal lobes is a late evolutionary development, reaching its greatest complexity in man. Nothing comparable to the parietal lobes in man occurs in the brains of the lower mamals, and it is in the arboreal mamals, the lemurs and the lower primates that the most conspicuous elaboration is found. The rise of the parietal lobes is matched by a change in the habits of the animal, from dependence on olfactory stimuli to greater dependence on tactile and visual stimuli. An aboreal existence demands a to greater dependence on tactile and visual system, and also promotes the fore-limb from an organ of locomotion to a grasping tool. It is in association with this greatly increased sensibility that the parietal lobe has developed. In man, one further, major, evolutionary advance has put him far above the other primates, namely the development of language; and though the origin of language is by no means clear, it is certain that the capacity for handling objects played an important part. It is to be expected therefore that the area of the brain connected with tactile and visual sensibility should also be involved with speech and the symbolic processes.

Clinical evidence from parietal lobe lesions suggests that this region of the brain is concerned with the higher symbolic functions, and it is not surprising, therefore, that animal experimental investigations have furnished little information on the function of the parietal areas. The earlier physiological experimenters found these regions disappointing, and labelled them the silent areas, and it is only in recent times, with the advent of refined electro-physiological techniques, that their function in high-grade sensory discrimination has been elucidated. The clinical picture after a lesion in the parietal lobes is diverse; a variety of symptoms may result depending, in part upon the situation of the lesion, but also, upon the nature of the lesion, its extent, the rapidity of its onset and the

nature of the brain in which the lesion occurs. To confuse matters further, many of the signs of parietal lesion may be hidden unless specially looked for, and two investigators with slightly different interests may gain two different impressions of the case. As an example one may consider the Gerstmann syndrome, which will be discussed more fully later; unless the observer is aware of the existence of the syndrome and its component parts he may not investigate to see whether there is right-left disorientation or finger agnosia. Consequently it is often difficult on reading older accounts of parietal lobe lesions to decide whether a certain sign existed in life or not.

It is not possiblt to go into details of parietal lobe symptomatology in even a cursory fashion, but it is true to say that parietal lesions are, in most cases, followed by a disturbance in symbolic thought, and this is usually manifested by a disorder in speech, reading or calculation. It is disturbances in calculation that we wish to discuss .

Acalculia

Calculation is not an inherent biological capacity, but one acquired by a process of learning, and thus, like language, is stamped with the configuration of a particular culture. A system of calculation comprises, a method of numeration, by which groups of objects are assigned a value on a scale, a method of notation by which the number of objects can be indicated, and a set of rules by which numbers can be manipulated and relations between them educed. The method of calculation adopted by the Western world, which has its basis in the decimal system is not the only method available. For example, the Roman system, whilst having a similar type of numeration, has a very different system of notation, the I, V, X, system, and a slightly different set of rules; it would not be possible to multiply CXXXV by XVL using our own methods of multiplication. Many primitive tribes have other ways of calculating, but a great many depend on the decimal system of numeration; the significance of this will be discussed later. Almost all discussion of acalculia has concerned disturbances in our own method of calculation.

Difficulty in calculation may follow from a breakdown in any one of the processes mentioned above, and as each of these involves several aspects of mentation, visual, auditory and ideational, the possible sources of disorder are legion. A lesion in almost any area of the cortex may result in acalculia, but nevertheless certain regions seem particularly vulnerable, and are associated with a specific disorder. A diffuse injury to the brain, whether from cerebral poisons or from trauma, may cause difficulty in calculation, but as every symbolic function of the brain is depressed in these cases, this is not surprising. Injuries to the frontal lobes may present with acalculia, but again this seems to be the result of a general lowering of cortical function, which often follows this type of lesion. A severe amnesia, from extensive brain damage, especially to the temporal lobes may interfere with that part of calculation dependant on rote memory.

Damage to the occipital regions, causing a visual agnosia, may interfere with calculation, because the patient can no longer recognise figures, but if told verbally what they are no difficulty is experienced.

Typically, however, disorders of calculation are associated with the parietal lobes. Nearly all lesions causing a gross aphasia are associated with some degree of acalculia. Practically all the cases described by Sir Henry Head in his work on Aphasia showed this defect. Occassionally, however, lesions of the parietal lobes may result in arithmetical difficulty, without any signs of an accompanying aphasia or agnosia; it was to such cases that Henschen in 1919 orginially applied the term acalculia. Two sorts of difficulty may occur, and may be called ideational and constructive acalculia. Both of these may best be illustrated by considering a few selected examples from the examination of Mr. S., who displayed both these types of defect.

A patient with ideational acalculia looses the meaning of numbers, and in severe cases the concept of value, so that he is no longer able to tell you which is the larger of two given numbers.

Examination of Mr. S.

"Can you count from one to ten?" He did so but with considerable difficulty and hesitation.

"Add four and nine." "Four and nine is er . . . nine, no, er . . . fourteen . . . no, I cannot do that."

"Add three and four." "That is er . . . four . . . seven . . . yes, that's right, seven."

"Subtract eight from twenty-four." "Eight from twenty-four, that is eight . . . eighteen, that's right, eighteen."

"Subtract six from nine." "Er . . . three."

"Divide thirty by six." Thirty from six, er . . . " "No, I asked you to divide thirty by six." "Oh, yes, thirty-six."

"Divide eight by two." "Eight from two, no by two, three . . . no, no it's no good, I cannot do that."

Although these few examples are very incomplete, they do illustrate some very interesting points. Mr. S. could identify figures shown to him with no difficulty, he could write figures when asked, and although the construction of the figure was poor its value was usually correct. He could provide answers to simple multiplications which he had learned by rote memory, but was unable to do the simplest division. He could add and subtract provided that all the numbers concerned were under ten. He was inconsistent in his answers, thus in one of the examples given he successfully added thirty and six, but asked to do so later he could not give the right answer.

Presented with problems on paper he was completely lost and confused the tens and units column. This type of acalculia, which manifests itself as a difficulty in arranging figures on paper is called constructive acalculia, and is typically seen as part of the Gerstmann syndrome; this syndrome has figured largely in discussions on acalculia and is worth considering.

The Gerstmann Syndrome

In 1924, Gerstmann published details of the case-history of a woman, who suffered from a striking disability to name the individual digits of her own or the examiner's hands when they were presented to her. Associated with this curious symptom was agraphia, acalculia, and right-left disorientation. Over the course of the next sixteen years, Gerstmann observed other cases, in which the same combination of symptoms occurred, and he was convinced that he had isolated a syndrome, comprising these four symptoms, dependant upon the same pathology. Other workers also published details of cases which fell within the same category, but it soon became apparent that the relationship between these symptoms was not a simple one. Not all invariably appeared, often one symptom would be greatly accentuated, and other symptoms, such as homonymous hemianopia, constructive apraxia, and difficulty in naming colours, were present so frequently that many workers felt that these should be included in the syndrome. Finger-agnosia was the most important symptom, usually it only affected the middle three fingers, and, the most interesting point about it, it affected only the fingers and not the toes. Severe lesions in the parietal lobes may result in loss of ability to identify parts of ones own body, but usually this applies to the whole body, or the whole of one side; finger-agnosia is the only instance where an isolated part of the body is affected.

The agraphia affects the construction of both letters and words, but except in severe cases the disturbance is in spontaneous writing only, the ability to copy being intact. The acalculia is of the constructive type, only in more severe cases is mental arithmetic disturbed. Right-left disorientation is the rarest of the symptoms, typically it affects only the body of the patient and not extra-personal space. Constructive apraxia is a common finding in parietal lobe lesions and a fairly frequent accompaniment of the Gerstmann Syndrome; it is a disorder of spatial relationships, a difficulty in putting together one-dimensional units so as to form two dimensional figures and patterns, and can be demonstrated by asking the patient to draw or to build simple patterns with match-sticks.

Much argument has been centred around the point of whether these four symptoms really constitute a syndrome, dependant upon a common lesion. Isolated symptoms and parts of the syndrome do occur but the general consensus is that the symptoms are inter-related in some way, and that if part of the syndrome occurs the rest will probably be elicited if carefully tested for.

The more important question is whether the typical syndrome has any localising value. Gerstmann believed that the underlying pathology was a lesion in the dominant parietal lobe, in the region of the parieto-occipital convenity, particularly in the region of the angular and middle-occipital convolutions. Critchely describes sixteen cases, in which the lesion was verified at post-mortem examination. In fourteen of these the lesion was in the left and dominant hemisphere, in all it was in the parietal region, in eight the angular gyrus was involved, and in the rest a large area of the parietal region, probably including the angular gyrus, was damaged. From this and other evidence there seems little doubt that a typical Gerstmann syndrome is associated with a lesion in the areas

mentioned. Cases are on record in which the lesion was diffuse, such as following carbon monoxide poisoning, and recently, cases have been described in which symptoms resembling the Gerstmann syndrome have occurred after electro-convulsive therapy. Whether these may be regarded as true Gerstmann syndromes is doubtful; the effects were usually transitory, finger-agnosia, which Gerstmann regarded as the most important symtom, rarely occurred and the full syndrome did not appear in any patient.

Mr. S. displayed to some extent all the features of the Gerstmann syndrome. Finger agnosia was not strongly marked but certainly existed, there was some degree of right-left disorientation, especially related to parts of his body, there was agraphia, acalculia, of both ideational and constructive types, and there was constructive apraxia and homonymous hemianopia. Of particular interest was his difficulty in playing the piano and typing; this, according to Mr. S. was due principally to confusing right and left, and the tendency for fingers to strike the wrong key. There was no motor or sensory impairment, and it is possible that this difficulty was a manifestation of finger agnosia and right-left disorientation. No post-mortem findings are available but investigations during life indicated that the lesion was in the left temporo-parietal region. As Mr. S. was strongly right-handed one would expect that his dominant hemisphere would be the left, and hence the lesion falls into the anticipated region, even though it cannot be localised more accurately.

Theories of the Gerstmann Syndrome

Many workers have offered an explanation for the Gerstmann syndrome, but in the majority of cases their theories have been couched in such vague psychological and physiological terms that they have added confusion to confusion. Inevitably a great deal of interest has centred around finger-agnosia and acalculia. The hand is the organ that has made Homo Sapiens. from an organ-of locomotion it has risen through a grasping organ, a feeding organ, to a delicate tool, one of the most important functions of which, in civilised man is writing, but it has yet another function—it is a counting organ. There is little doubt of the importance of the hand in arithmetic, as children we learn to count on our fingers, and in some cases we resort to it as adults to help us in calculations. Many primitive peoples depend solely on the hand and to a lesser extent the toes as an abacus. In many languages the use of the hand as a counting instrument is reflected in their numerals. Thus in many languages the word for one is the same as the word for finger, for five the same as hand, ten in Melanesian is "both hands" and twenty is "man" (hands and feet). *Idiots savant,* who have been rapid at calculations, have been known to use a method of digital computing, much in the same way as some gypsies quoted by Critchely. It is interesting that many different cultures should have chosen the decimal system of numeration; as Aristotle says, "Why do all men, both foreign and Greek, count in tens and not in any other numbers? . . . Is it because all men have ten fingers?" (Problems XV.) It is also interesting that in cases of acalculia one should frequently find that calculation becomes much more difficult with numbers greater than ten.

The hand is also concerned with our ideas of left and right. Many otherwise intelligent adults persist in having difficulty in determining left and right, and refer to their hands to decide which is which. One highly intelligent friend, with this difficulty, imagines that he is playing the piano, his left hand is then that which plays the bass notes, another has to think of himself writing, the left being the side he writes with.

Klein, who propounded what might be called the phylogenetic theory, imagined that in the region of the dominant parietal lobe is a centre for the integration of symbolic functions of the hand, but not including motor skills. Damage to this region degrades the hand to one of its more primitive phylogenetic uses, as either a grasping tool, or a feeding tool. Klein qualified his theory by saying that this explanation could not be applied to all cases, and that in the majority of cases the picture was complicated by other symptoms.

Another attempt to explain the Gerstmann syndrome has been to regard the fundamental lesion as occurring in a centre for spatial organisation. As a result the patient becomes disorganised in space, which manifests itself in constructive apraxia, right-left disorientation, agraphia and to a lesser extent in constructive acalculia. The fact remains, however, that not all patients with a Gerstmann syndrome show constructive apraxia, and most show no other signs of spatial disorientation.

Conclusions

It is disappointing that one is unable to come to any worthwhile conclusions on the subject of acalculia. The very nature of the subject is imperfectly understood, and most of the literature on it is vague and inconclusive. There are, however, one or two general observations that do emerge. The first of these is that calculation is a cultural rather than a biological process, and one that requires many different processes of mentation. Any lesion of the brain may interfere with these systems, and it is useless to look for one area in the brain responsible for calculation. One interesting point might be raised here, and that is the relation between calculating ability and mathematical ability. Calculation is only one aspect of mathematical ability, and it is known that skill in calculation may not be matched with skill in mathematics. Many professors of mathematics are notoriously bad calculators, and similarly some of the lightning calculators recorded in history have been useless at other aspects of mathematics. Little or no work seems to have been done on this problem, all cases of acalculia have dealt with arithmetical problems only, further investigation would seem to be very profitable.

The other observation which might be made is the association of the four symptoms of the Gerstmann syndrome with lesions in the region of the angular gyrus. Before lapsing into attractive theories of the origin of calculation, and the relationship between mind and body as seen in the connection between finger-agnosia and acalculia, it is as well to consider how much information can be gained from this type of investigation. The function of the brain is to transform an input, representing sensory information, into an output, to the effector organs. The nature of the transformations which occur are only just being understood but it seems that a major function of the cortex is to act as an analyser and computer. Most of the evidence seems to suggest that this function is diffuse, and that any lesion in the brain will interfere with this process, but not in a specific manner, with the exception of the projection areas, which represent the areas of input and output. In animals relatively large areas of the cortex may be destroyed, with comparatively little effect on observable behaviour, providing the projection areas are intact. When, however, the animal is pushed to the limits of its learning capacity, it can be demonstrated that the lesion has interfered with behaviour, which is what one would expect, as the system is now smaller. In man there appears to be, either far less placticity, or else our measure of human behaviour is more precise, for a lesion almost anywhere in the cortex interferes in some way with behaviour. In some cases lesions in particular regions seem to be associated with specific changes in behaviour but from knowledge of the type of system we know the brain to be, we are not justified in assuming that a particular function is localised to that region, or that before the advent of the lesion the region in question contained the casually necessary mechanisms for the affected behaviour. The main problem at the moment is to learn more of the functions of the cortex, and the nature of the transformations carried out there, looking, if necessary to machines and models for our analogies. Only then will we be in a position to understand the full significance of clinical evidence, and possibly be able to speculate on the origin of language and the symbolic processes.

Acknowledgment

I should like to thank Dr. J. W. Aldren Turner for permission to publish details of this case and for the interest that he has shown in its preparation.

References

ARBUSE, D. I. (1947) The Gerstmann Syndrome.
BENTON, A. L. & ABRAMSON, L. S. (1952) Gerstmann Syndrome symptoms following electro shock treatment. *Arch. Neurol. Psychiat.*, 68. 248-257.
CRITCHELY, M. (1953) The Parietal Lobes. *London, Edward Arnold and Co., etc.*
GERSTMANN, J. (1940) Syndrome of fingeragnosia, disorientation for right and left agraphia, and acalculia. *Arch. Neurol. Psychiat.*, 44. 398-408.
GREWEL, F. (1952) Acalculia. *Brain*. 75. 397-407.
HEAD, SIR HENRY (1926) Aphasia and the kindred disorders of speech. *Cambridge*.

Sports News

VIEWPOINT

Sporting activities of any person in this Hospital are recognised by the Student's Union in the form of both Colours and Honours. Names of persons are submitted by the club concerned to the Student's Union, for its approval, which approval is not invariably given. There are minimum qualifications in each club which must be fulfilled before any player can even be considered. For instance, in the Hockey Club, a player has to represent the 1st XI in United Hospitals Cup matches for at least two seasons before Honours can be awarded. This type of qualification is, of course, very necessary. But it does seem that the actual difference between the award of Colours and Honours in some clubs is merely a matter of length of service. Colours are awarded, rightly enough, for either ability or length of service, and Honours appear to follow on the year after, as a matter of course. There should surely be a much greater difference in value between these two. Honours should be a much more difficult award to attain, limited to a very select few. For instance, in the case of most clubs, selection for a United Hospitals team should be a minimum requirement. At present, Honours are within reach of very ordinary players, and this situation is to be deplored.

ROWING

United Hospitals Regatta 1959

The United Hospitals Regatta was held on Wednesday, November 25, at Putney in weather which was remarkably mild for the time of year, but in water that has been known to sink supposedly better crews in past years.

Bart's again boasted the largest entry for this the Senior hospital rowing event of the year, having forty-four members of the Medical College representing the Hospital in one or more crews. Of these, ten were having their first taste of racing under competitive conditions. Since they had only been rowing for about eight weeks, it is very commendable that they were able not only to take to the water at all, but to achieve the standard they did.

Two Senior IV's were entered for the Regatta, labelled A and B though as is usually the case with Bart's Senior IV's at this time of year, when the Regatta day arrived this was no indication of the relative standard of the two crews. The B crew had to row their first heat against the Westminster Hospital in the very worst water. The fact that they lost was largely due to these conditions and the luck of the draw.

The A crew was fortunate in having a bye to the semi-final by which time the maelstrom had to some extent abated. Their row was also against the Westminster Hospital, who "bumped" the Bart's crew at about the half-way mark. Bart's were then disqualified, supposedly for taking the Westminster's water, having at that time almost a length ahead. The decision was felt to be unjus since the umpire said that had the "bump" occurred a short distance before Westminster would have been in the wrong.

The two pairs were unlucky not to have got further than they did, the A pair losing a close race with the eventual winners from St. Mary's Hospital and the B pair being disqualified while in the lead. The outcome of this event does not reflect the high standard of rowing achieved by our pairs.

R. I. Wilson, the veteran sculler of the Hospital, sculled with great gallantry but was unfortunate once again to be drawn against and to lose to M. H. Bartlett of St. Mary's Hospital, the eventual winner. The Junior IV's, again victims of the elements, lost to better crews.

The A VIII, rowing extremely well, brought off a very satisfactory victory in their first heat against Guy's Hospital. They had the disadvantage of the Middlesex station (being out of the tide) and won by a half-length, the two crews being level over most of the course. The second round saw Bart's A rowing against Bart's B, who gave the A crew a much more difficult race than they had anticipated. I think it is correct to say that no other hospital was able to produce an VIII entirely of freshers, which augurs well for the future of the Club. We wish this crew all success in the coming year when they will be competing against oarsmen of equal experience.

The Rugger IV whose composition was uncertain until the moment they took to the water, produced the most exciting race of the day and perhaps the most satisfying. Competing against a IV from St. Thomas' Hospital which contained a member of Leander and three other oarsmen of some prominence, they surprised everyone and not least themselves by winning by a half-length. They were unlucky to lose the Final by one-and-a-half lengths to the Westminster Hospital.

Our grateful thanks are due to all those members of the Staff and Medical College who were able to get down to the river to support the Club on the occasion. This is always most welcome.

On the whole a disappointing day but the Dinner in the evening did not reflect the gloom of earlier proceedings. Sixty-two people sat down to dinner at Diviani's Restaurant in Newgate Street, having enjoyed the President's sherry in the library beforehand. Mr. Tubbs, Vice-President, took the chair and Mr. G. J. Hadleld was the Gues of Honour.

The evening was brought to a successful conclusion in the "Hand and Shears".

Crews

Senior IV's

	A	B
Bow	W. S. Shand	D. L. King
2	P. W. A. Mansell	T. G. Hudson
3	R. H. T. Ward	J. J. D. Bartlett
Stroke	T. W. Meade	N. E. Dudley

Pairs

	A	B
Bow	R. H. T. Ward	E. M. C. Ernst
Stroke	T. W. Meade	J. G. Diamond

Senior Sculls

A. I. Wilson

Junior IV's

	A	B
Bow	J. J. H. Gilkes	J. D. Hardy
2	W. H. F. Thompson	J. F. Merrill
3	P. R. Husband	A. C. Danesh-Haeri
Stroke	K. M. Stephens	D. H. Orrell
Cox	J. U. Watson	K. Manchester

Junior VIII's

	A	B
Bow	A. J. Miller	M. S. Lipsedge
2	E. Abell	M. W. Casewell
3	D. L. Hunter	J. K. Anderson
4	P. C. Scriven	T. M. Bucknill
5	A. L. Houghton	A. D. R. Disher
6	C. J. Burnham-Slipper	D. R. Sutton
7	R. B. Blake-Jakes	D. D. Bodley-Scott
Stroke	I. A. H. Bootes	D. V. Jones
Cox	N. N. L. Loughnan	R. J. Hamshere

Rugger IV

Bow	J. M. Lewis
2	R. J. C. Evans
3	J. J. D. Bartlett
Stroke	J. Morrison
Cox	G. L. Scott

RUGGER

1st XV v. Cranleighans at Chislehurst, Nov. 14.

With a heavy fall of rain making the ground soft and the ball greasy, the Hospital kicked off, but could make no impression on the visitors' defence, and after an even 1st half there was no score.

The start of the second half followed the same pattern but the Cranleighians opened the scoring with a penalty. This discouraged the whole Bart's side and the visitors from then on were well on top. Just before No Side, the Cranleighans scored a very good push over try to make the final score Bart's 0, O. Cranleighans 6.

Team: M. Britz, P. Niven, J. Stevens, A. Letchworth, M. Rolfe, J. Bamford, C. Charlton, B. O. Thomas (Capt.), M. Jennings, A. Knox, L. R. Thomas, J. Irvine, R. Jones, P. Moynagh, G. Halls.

1st XV v. O. Alleynians at Dulwich, Nov. 21.

In conditions ideal for a very fast game the Hospital started playing into the wind and against an appreciable slope. The home side soon took advantage of the ground and were 6 points ahead at half time.

The second half was marked by the supremacy of the Bart's team, and the play was confined for most of the time to the O. Alleynians' half. However, although coming very close to scoring on several occasions, the Hospital couldn't break the home sides' defence, and the game ended Bart's 0, O. Alleynians 6.

Team: P. Niven, S. Harris, J. Stevens, A. Letchworth, M. Rolfe, R. R. Davies (capt.), I. Peek, B. O. Thomas, M. Jennings, A. Knox, M. Orr, J. Hamilton, D. Richards, R. Jones, G. Halls.

1st XV v. Lloyds Bank at Beckenham, Wednesday November 25.

With a very changed side, the Hospital were 3 points down after 10 minutes. However, Bart's quickly replied with a good try by Waterworth, Stevens adding the extra points. Just before half-time Knox scored again after a good forward movement.

In the second half the Hospital dominated the play and tries from Waterworth and Harris brought the game to a close, Bart's 14, Lloyds B. 6.

Team: P. Niven, S. Harris, J. Stevens, A. Letchworth, M. Waterworth, R. R. Davies (capt.), K Bowles, B. O. Thomas, M. Jennings, A. Knox, M. Orr, P. Bolody, H. Jones, G. Halls.

1st XV v. U. S. Chatham at Chatham, Saturday November 28.

Under very good conditions but with the ball rather heavy, the Hospital were soon pressing and were three points ahead from a penalty by Stevens

In the second half the Services with the wind and slope in their favour were kept from scoring only by good defence by the Bart's team.

However, in the closing stages of the game Chatham scored a try from a blind side movement and so the game ended Bart's 3, U.S. Chatham 3.

Team: P. Niven, S. Harris, J. Stevens, A. Letchworth, N. Burbridge, R. R. Davies (capt.), A. P. Ross, B. O. Thomas, B. Gurry, A. Knox, J. Hamilton, M. Orr, D. Richards, R. Jones, G. Halls.

* * *

SAILING CLUB REPORT 1959

Winter Racing for Max Rosenheim Trophy

March 4: St. Thomas' Hospital 1st., Bart's 3rd.
Helm, R. C. Birt, Crew, Miss J. V. Bond.

This race concluded the winter series, which was won by the London Hospital, Bart's final position being 4th.

Sherren Cup

May 16: 1st Heat. St. Mary's Hospital 1st, Bart's 5th. Helm, D. M. Welch. Crew, D. K. Nouri. Miss J. Fowler. The London Hospital won the cup in the final.

Bannister Cup Series

May 2: Bart's 1st., King's 2nd.
Helm, D. M. Welch. Crew, N. Salisbury, W. G. Fischer.
July 7: Guy's 1st., Bart's 2nd.
Helm, R. C. Birt. Crew, M. Punch, Miss J. Fowler.

Aug. 1: Middlesex 1st., Bart's 2nd.
Helm, R. C. Birt. Crew, D. M. Welch, R. Gabriel.

Sept. 9: Bart's 1st., St. Mary's 2nd., Guy's 3rd.
Helm, W. G. Fischer. Crew, A. Pyke, R. C. Birt.

This was our most closely contested race, Guy's and Bart's at this point leading the series with equal points, the only other serious opposition being from Mary's represented by Mrs. Stephenson.

The course lay from the Royal Corinthian line upstream against a strong ebb tide, leaving W. Fairway to starboard, rounding Cliff to port and leaving W. Fairway to port on the way back to the finish. The wind, light and fickle, gave us a reaching start, but a long beat home.

Guy's made an excellent start closely followed by Mary's, then Bart's; Bart's overtook Mary's and challenged Guy's to leeward (inshore) but there was insufficient water and we fell back while Mary's tried unsuccessfully to windward. Bart's tried but had to drop back as the wind dropped, so it went on. For the next two miles Guy's were continually defending their position against attacks from Bart's and Mary's, the wind continuously shifting so that we were within seconds running or close reaching; at long last Fischer seized his opportunity and slipped by on a run as Guy's were for a moment blanketed by Mary's. From then on Bart's drew steadily away from the rest to lead by 30 yards from Mary's (who had slipped by later) at Cliff and eventually crossing the line some 200 yards ahead, winning the Bannister Cup for the first time since 1955.

Harvey Wright Gold Bowl

Aug. 29: Bart's 1st., U.C.H. 2nd.
Helm, W. G. Fischer. Crew, D. Orrel, D Howells.

This is generally considered to be the most important inter-hospital event; it is awarded to the hospital winning a race in Burnham Week between the hospitals standing highest in the Bannister Cup series. The Bowl itself is made of solid gold and was valued at around £400 in 1950.

In conclusion the sailing club has won 2 out of 3 main events this year and as Bill Fischer, the club's most outstanding helmsman, remains with us we should do even better in 1960. Club membership has nearly doubled and we may expect that someone will acquire Fischer's skill to follow in his wake in 1961.

RIFLE CLUB

During the Small-bore season this Winter, the club has nine teams competing in the United Hospitals, University of London, and N.S.R.A. postal leagues. This entails the shooting of a considerable number of cards in addition to the usual fixture list of Shoulder-to-shoulder matches.

At approximately halfway through the season the league tables show the club in the following positions:

United Hospitals League:

		Shot	Won	Lost	Place
Lloyd Cup	"A"	2	1	1	5th
	"B"	3	2	1	3rd
Tyro Competition	"A"	2	2	—	1st
	"B"	2	2	—	3rd
	"C"	2	1	1	7th

Pistol. The "A", again competing in the Div. I of the University League, is scoring much higher than last season, and is showing distinct promise. The "B" is in Div. II of the same league.

"A"	4	3	1	1st
"B"	2	1	1	2nd

Standing & Kneeling. Following on last season's successes in this field the teams have both been promoted, to Div. I of the University league, and to Div. 7 of the N.S.R.A. league, a jump of three divisions. As is to be expected with these promotions both teams are meeting much stronger opposition than last season.

In addition to the leagues, the Club entered a team in the Browne-Martin Competition—a k.o. competition for teams in the London area. Their stay was, however, brief, being eliminated in the first round by Walthamstow Ensign 772-785.

The following Shoulder-to-shoulder matches have also been fired:

VIII v St. Mary's Hospital	Won 745-726
VIII v City Police	Lost 763-773
IV and S & K II v St. George's Hospital	Won 590-580

TABLE TENNIS

1st Team v. Q.E.C. (University of London Caribbean Cup). Nov. 20. Results. Bart's won 5-4.

This competition is open to all first teams, so it was with trepidation that we went to Q.E.C. Our fears proved unfounded, however, and the team did well to win. J. Collier played superbly, especially in defence, winning all his three games.

1st Team v. Royal Veterinary College (University League). Nov. 23. Drew 5-5.

This was the first time that A. J. Miller has been able to play this season, and he marked his entry by three clear wins. J. Collier kept up his previous high standard by winning 2 of his 3 matches.

1st Team v. Northern Polytechnic (Home). University League. November 24. Bart's lost 10-0.

A rather weakened 1st team met very strong opposition who had won their two previous matches 10-0 and 9-1. Bart's were well beaten, although B. Hore did well to take a game off the oppositions' No. 2.

LADIES' HOCKEY

v. Wimbledon 2nd XI (H). Sat. Nov. 7. Won. 1-0.
This was a hard fought match and enjoyed by all. The forwards worked hard and were unlucky only to score once, for play was in our half of the field for the majority of the game.

Team : I. Tomkins, J. Tufft, P. Kieity, S. Cotton, E. Knight, T. Coates, J. Arnold, J. Hartley, E. Clements, S. Minns, J. Swallow.

v. King's College (H). Sat. Nov. 14. Won 4-1.
The team did well to win this match on a rather damp afternoon. We were very glad to welcome two physiotherapists into the team, who both played very well despite their claims to recent inactivity on the field.
Team : I. Tomkins, G. Turner, P. Kieity, R. Murray, E. Knight, J. Thorogood, R. Waters, J. Hartley, M. Robertson, E. Clements, S. Cotton.

v. Wye College (A). Sat. Nov. 21. Lost 2-4.
[2nd Round, London University Inter-collegiate Tournament]

For the second year running we paid a brief visit to Wye College, near Ashford, Kent, and once again a member of the team was heard to say "I thought this was a London University tournnament". So it is, but evidently London stretches further than any of us thought.

This was a hard fast game, and Bart's proved to be the slower team. Time after time good passes were intercepted, and the ball would return once more to the Wye forwards, all of whom had the ability to hit the ball hard at the goal. Bart's had a fair number of chances to score, but the forwards seemed to lack the final punch when they reached the circle.

Team: I. Tomkins, J. Tufft, P. Kielty, J. Thorogood, E. Knight, T. Coates, J. Arnold, J. Hartley, S. Cotton, S. Minns, J. Swallow.
Goals scored : S. Cotton (1), S. Minns (1).

v. University College (A). Wed. Nov. 25. Lost 3-6.
The weakness on this occasion was the inability of the defence to stop the fast and well-combined U.C. forwards. Bart's forwards played well but lacked enough support for their hard worked halves.
Goals scored by : S. Minns (2), J. Hartley (1).
Team : C. Lloyd, R. Murray, P. Kieity, J. Thorogood, I. Tomkins, T. Coates, M. Goodchild, J. Hartley, E. Clements, S. Minns, J. Arnold.

v. Lensbury 1st XI (H). Sat. Nov. 28. Won 2-1.
Everyone envied the umpire on the sideline with his umbrella ! Bart's forwards played well with plenty of cross passes. Goals were scored by J. Hartley and S. Minns. Defence tackled well, but tended to be slow clearing the ball with a good hard hit. R. Murray and S. Cotton both fought hard and stopped the hard pressing Lensbury forwards by good accurate tackling and intercepting cross passes.

Team : I. Tomkins, P. Kieity, S. Cotton, J Thorogood, R. Murray, T. Coates, J. Arnold, J. Hartley, R. Waters, S. Minns, M. Goodchild.

v. Reading University. Wednesday, December 2. Lost 2-4.

Bart's were slow to settle down in this match, and Reading had scored their first goal after only a few minutes. Bart's then fought back and S. Minns took the ball down the field herself and scored a good goal. After this both teams were in the attack, but the Reading forwards were a faster and better combined line and found it easy to pass the Bart's defence. The next Bart's goal was scored after half-time by E. Knight, bringing the score to 2-2. Reading went on to score twice more. Again Bart's needed to be faster onto the ball and in clearing the ball.

Team : I. Tomkins, J. Tufft, T. Coates, J. Thorogood, R. Murray, J. Stephan, J. Arnold, J. Hartley, E. Knight (capt.) S. Minns, S. Cotton.

v. St. Thomas's Hospital. Saturday December 5 Won 4-2.

(First Round of U.H. Cup)

This was not an easy win for Bart's. The game started well with Bart's in control of the ball most of the time, and J. Hartley very soon scored with a hard shot from the edge of the circle ; the next goal followed soon afterwards when S. Minns took the ball down the field and flicked it into goal. St. Thomas's scored next from a penalty corner. At half-time the score was 3-1. In the second half both sides scored once again, St. Thomas's goal again followed a corner.

Team: I. Tomkins, J. Tufft, P. Kieity, R. Murray, E. Knight (capt.), T. Coates, J. Arnold, J. Hartley, R. Watters, S. Minns, S. Cotton.
Umpires : Dr. J. Chambers, Miss J. Ware.

NOTICES

The Cricket Club is holding a dinner in honour of Mr. J. E. A. O'Connell, who has retired from the position of President of the club. It is to be held at Simpsons in the Strand on Wednesday, February 10, 1960. If any ex-members of the club who have not been contacted would like to attend please write to R. T. G. Merry, the Abernethian Room.

The next lecture on General Practice will be given by Dr. G. F. Abercrombie at 12.0 noon on Wednesday, February, 10th, 1960.

★ ★ ★

Book Reviews

CLARK'S APPLIED PHARMACOLOGY

(9th Edition) By Andrew Wilson and H. O. Schild. Published by Churchill. Price 50s.

The 1959 edition of this book brings up to date, at last, a book of great value to every student. Much work has been done since the last edition (1952), which has necessitated the rewriting of most of the chapters, and the addition of two new ones.

One of these is on the chemotherapy of tuberculosis. A large number of drugs are discussed, though surprisingly, no mention is made of the recent use of intrathecal tuberculin in the treatment of tuberculous meningitis. The other new chapter is on psychopharmacology. This, as yet, is very much in an experimental and empirical stage, and clinical application is still very limited.

The layout of the chapters is very helpful, starting with a useful reminder of the physiology of each system, and the general chemical and pharmacological properties of the relevant drugs. The specific properties of individual drugs can thus be more easily related to their therapeutic uses. Further, there is in many cases, a clear and concise account of experiments demonstrating these properties. The list of preparations following each chapter is extremely valuable to the clinical student, though it would be still more useful if more of their synonyms were included.

Unfortunately, this edition omits a very useful chapter on inorganic metabolism, which in the previous edition discussed such important topics as salt, water, and acid-base regulation, and the requirements and uses of inorganic substances. Some of it is included in other chapters (for example, the chapter on the kidney), but much of it is not, which is a pity. Also omitted is a chapter on the functions of the central nervous system, which, though largely physiology, provided a sound basis for the following chapters on the pharmacology of the CNS.

The index is comprehensive and well set out. References are given at the end of each chapter: rather too many for the average student, but too few for detailed study, as very few original papers are given.

The special value of the book lies in its approach to therapeutics, and it provides a much needed link between the textbooks of pharmacology and of medical treatment.

S.M.W.

WOLFF'S DISEASES OF THE EYE, 5th Edition Price 42s.

Mr. Redmond Smith has brought fresh life into a well established text book. His careful revision has clarified parts of the text and brought other parts up to date. Be replacing some of the drawings with photographs, he has given the book a more realistic flavour.

It is, however, extremely difficult to bring to life a subject such as Ophthalmology, which is barely touched on in bedside or Out-patient teaching in this hospital. In this respect, the book succeeds more than most, although naturally the chapters, dealing with subjects already encountered first-hand, are easier to read and infinitely more interesting.

The book does not demand much previous knowledge, and there are useful descriptions and illustrations of the anatomy of the normal eye. In addition, it contains good, clear accounts of practical procedures such as the use of Opthalmoscopes, the cover test, visual field tests, etc.

The layout is orderly and precise. Each disease is considered briefly under headings of Pathology, Aetiology, Symptoms and Signs, and Treatment.

I have two criticisms. The first is perhaps frivolous; I do not like glossy paper because I find the reflections from table lamps distracting. Secondly I found the chapter on surgical procedures difficult to understand, probably because it lacked enough diagrams.

Nevertheless, the book is slanted throughout towards the practical side of Ophthalmology and so if read selectively, caters for the ordinary student's needs, and should be a valuable aid in General Practice.

J.P.R.

Recent Papers by Bart's Men

*ABERCROMBIE, G. F. Recent work of the emergency bed service. *Lancet*, Sept. 19, 1959, pp. 398-400.

ABRAHAMS, Sir Adolphe. Diet in athletic training. *Med. World*, 91, Nov., 1959, pp. 467-473.

————. Dorando's marathon. *The Broad Way*, 17, Oct., 1959, pp. 139-140.

*ANDREWES, C. H. The common cold and other minor respiratory infections. *Brit. med. Bull.*, 15, 1959, pp. 221-4.

*———— (and Worthington, G.). Some new or little known respiratory viruses. *Bull. Wld. Hlth. Org.*, 20, 1959, pp. 435-443.

*BACH, Francis. Rheumatic diseases and their relation to life insurance. 1959.

BETT, W. R. Herman Michael Biggs (1859-1923): pathologist, physician and public health pioneer. *Med. Press*, 242, Sept. 23, 1959, p. 260.

*————. A new drug treatment of schizophrenia, trifluoperazine ('stelazine'). *Current med.*

Pract., 3, July 1959, pp. 375-6.

*————. Phenothiazine derivatives in the treatment of mental disorders. *Med. Proc.*, 5, Aug. 22, 1959, pp. 359-362.

————. Robert Williamson Lovett (1859-1924): orthopaedic surgeon. *Med. Press*, 242, Nov. 25, 1959, p. 462.

————. Sir St. Clair Thomson. (1859-1943): laryngologist and connoisseur. *Nursing Mirror*. 109, Oct. 2, 1959, p. 45.

*————. Sven Gustaf Hedin (1859-1933): inventor of the haematocrit. Johann Adam Schmidt (1759-1809): ophthalmologist, pathologist, physician, and army doctor. James Playfair McMurrich (1859-1939) biologist, anatomist, historian. Augusta Dejerine-Klumpke (1859-1927) of "Klumpke's paralysis". *Med. Press*, 242, Oct. 14, 1959, pp. 322-323.

BIRSTINGL, M. A. A study of pancreatography. *Brit. J. Surg.*, 47, Sept., 1959, pp. 128-139.

BORRIE, Peter. Advances in the treatment of skin diseases. *Practitioner*, 183, Oct., 1959, pp. 419-424.

*BOURNE, Geoffrey. Instrumentation and cerebration in medicine. *Med. Press*, 242, Oct. 28, 1959, pp. 355-358.

BROOKE, B. N. Granulomatous diseases of the intestine. *Lancet*, Nov., 7, 1959, pp. 745-749.

———— (with Slaney, G.) Cancer in ulcerative colitis. *Lancet*, Oct., 31, 1959, pp. 694-698.

*BURROWS, H. Jackson. Osteochondritis juvenilis. *J. Bone Jt. Surg.*, 41B, Aug., 1959, pp. 455-456.

CAPENER, Norman. Accident services in Great Britain. *J. Bone Jt. Surg.*, 41B, Aug., 1959, p. 457.

*COHEN, E. Lipman. Necrobiosis lipoidica. (2) Livedo reticularis. *Brit. J. Derm.*, 71, Aug.-Sept., 1959, p. 312.

CRAWHALL, J. C., SCOWEN, E. F., and WATTS, R. W. E. Conversion of glycine to oxalate in primary hyperoxaluria. *Lancet*, Nov. 14, 1949, pp. 806-809.

————, De MOWBRAY, R. R. SCOWEN, E. F., and WATTS, R. W. E. Conversion of glycine to oxalate in a normal subject. *Lancet*, Nov., 14, 1959, p. 810.

CULLINAN, E. R. Presidential Address: "Trends in medicine 1939-1958". *Trans. med. Soc. Lond.*, 75, 1958-9, pp. 1-14.

DALY, I. de Burgh, and DALY, M. de Burgh. The effects of stimulation of the carotid body chemoreceptors on the pulmonary vascular bed in the dog: the "vasosensory controlled perfused living animal" preparation. *J. Physiol.*, 148, 1958, pp. 201-219.

————, and DALY, M. de Burgh. The effects of stimulation of the carotid sinus baroreceptors on the pulmonary vascular bed in the dog. *J. Physiol.*, 148, 1959, pp. 220-226.

DALY, M. de Burgh, *see* DALY, I. de Burgh, and ————.

*DARMADY, E. M. (and Stranack, Fay). Autoradiography of the isolated nephron. *Proc. Soc. exp. Biol Med.*, 100, 1959, pp. 658-660.

DE MOWBRAY, R. R. *see* CRAWHALL, J. C., and others.

*DOBREE, J. H. Scalpel and scissors: a flanged incision for cataract extraction. *Brit. J. Ophthal.*, 43, Sept., 1959, pp. 513-520.

*FISON, T. N. A follow-up of acute glomerulonephritis in infancy. 1959.

*FRIEND, Francis. 25 Jahre Röntgen-Frühdiagnose der Lungen-tuberkulose *Wien. klin. Wschr.*, 71, 1959, pp. 519-520.

*GILLIES, Sir Harold. Surgical replacement of the breast. *Proc. roy. Soc. Med.*, 52, Aug., 1959, pp. 597-602.

GIRLING, J. A., *see* SHOOTER, R. A., and others.

GLENIETER, T. W. A modulating influence of mesoderm on early trophoblast. *J. Anat.*, 93, Oct., 1959, pp. 86-7.

GRIFFITHS, J. D., *see* MORGAN, C. Naunton and ————.

HAMILTON, W. J. (with Boyd, J. D.) .The "Giant cells" associated with human placentation. *J. Anat.*, 93, Oct., 1959, p. 587.

*HEWER, C. Langton. Forty years on. *Anaesthesia*, 14, Oct. ,1959, pp. 311-330.

*HIBBARD, B. M. Hydrops foetalis in one of uniovular twins. *J. Obstet. Gynaec. B.E.*, 66, Aug., 1959, pp. 649-653.

*HOPPER, P. K. (with Armstrong, J. A.). Fluorescence and phase-contrast microscopy of human cell cultures infected with advirus. *Exp. Cell. Res.*, 16, 1959, pp. 584-594.

*HOWELL, Trevor H. The use and abuse of tranquillizers in geriatrics. *Brit. J. Addict.*, 55. Jan., 1959, pp. 107-109.

*HUBBLE, Douglas. Advances in paediatrics. *Practitioner*, 183, Oct., 1959, pp. 411-418.

————. The care of the well baby. *Queen's med. Mag.*, 51, Oct., 1959, Supp. pp. 2-3, 14.

HUNT, John H. The College of General Practitioners and Lincoln's Inn Fields. *Ann roy. Coll. Surg. Engl.*, 25, Aug./Sept., 1959, pp. 191-194.

HUNTER, C. J. W., see SHOOTER, R. A., and others.

*JOEKES, A. M. (and Heptinstall, R. H.) Focal glomerulonephritis. *Quart. J. Med.*, 28, July, 1959, pp. 329-346.

JONES, F. Avery. The causes of indigestion. *Brit. J. clin. Pract.*, 13, Nov., 1959, pp. 747-748.

————. Colon, rectum and anus—medical. Oesophagus, stomach, and small intestines—medical. *Med. Annual*, 1959, pp. 64-67; pp. 95-108.

*JOPLING, W. H. (and Woodruff, A. W.). Treatment of tapeworm infections in man. *Brit. med. J.*, 26 Sept., 1959, pp. 542-44.

KERSLEY, G. D. (and Palin, A. G.). Amodiaquine and hydroxychloroquine in rheumatoid arthritis. *Lancet*, Nov. 21, 1959, pp. 886-888.

KEYNES, Sir Geoffrey. The anatomy of Thomas Geminus: a notable acquisition for the Library. *Ann roy. Coll. Surg. Engl.*, 25, Aug./Sept., 1959, pp. 171-175.

KINMONTH, J. B. (and Shepherd, R. C.). Accidental injection of thiopentone into arteries: studies of pathology and treatment. *Brit. med. J.*, Nov. 7, 1959, pp 914-918.

LEVERTON, J. Spry (and Foss, George L.). A follow-up of three cases of arrhenoblastoma. *J. Obstet. Gynaec. B.E.*, 66, Aug., 1959, pp. 632-639.

PAPERS BY BART'S MEN — *continued*

LOFTS, B., and MARSHALL, A. J. The post-nuptial occurrence of progentins in the seminiferous tubules of birds. *J. Endocrin.*, 19, Oct., 1959, pp. 16-21.

*LONGLAND, C. J. (and others). Cold-potentiated recovery of blood-pressure after bleeding in rats. *Brit. J. Surg.*, 47, July, 1959, pp. 90-94.

*MCDONALD, D. A. and TAYLOR, M. G. The hydrodynamics of the arterial circulation. From *Progress in Biophysics and Biophysical Chemistry*, vol. 9, 1959.

MACKENNA, R. M. B. The practice of dermatology. *Trans. med. Soc. Lond.*, 75, 1959-9, pp. 1-14.

*MCMENEMEY, W. H. (and Cumings, J. N.). The value of the examination of the cerebrospinal fluid in the diagnosis of intracranial tumours. *J. clin. Path.*, 12, Sept., 1959, pp. 400-411.

MARSHALL, A. J., *see* LOFTS, B., and ————.

*MASON, R. M. (and Steinberg, V. L.). Cervical spondylosis: pilot therapeutic trial. *Ann. phys. Med.*, 5, May, 1959, pp. 37-47.

MENDEL, David, *see* YOUNG, T. M., and ————.

*MORGAN, C. Naunton, and GRIFFITHS, J. D. High ligation of the inferior mesenteric artery during operations for carcinoma of the distal colon and rectum. *Surg. Gynec. Obstet.*, 108, June, 1959, pp. 641-50.

*MURRAY, E. G. D. About the staphylococcus. *Canadian Nurse*, 55, Sept., 1959.

*MURRAY-DRANSFIELD, C. A walking-aid. *Lancet*, Aug. 15, 1959, p. 116.

*PERKINS, E. S. The effect of adenosine triphosphate on the intraocular pressure of rabbits. *J. Physiol.*, 147, 1959, pp. 419-424.

Busy people appreciate

SMITH'S SERVICE

We can deliver your newspapers and magazines, supply you with books of all kinds, print your stationery and visiting-cards, bind your professional journals, and handle your advertisements for any newspaper. Our branches carry an excellent range of stationery, fountain-pens and pencils.

W. H. SMITH & SON

branches throughout England and Wales

You probably know us best as the makers of Humanised Trufood, Spoonfoods and Trufood Cereal Food. But we are unrivalled too in the production of specialised foods for babies needing special diets. Our range includes *Prosol* —invaluable where a high intake of protein is indicated; *Edosol*—a low-sodium synthetic milk powder; *Locasol* —specifically designed for low-calcium diets; *Galactomin*—for low-lactose diets; and *Minafen* for phenylketonuria. Our knowledge is at your disposal and we are always willing to consider the production of baby foods to meet your special requirements if you will write to Trufood Limited, 113 Newington Causeway, London, S.E.1.

TRUFOOD

Formulated Baby Foods

HUMANISED TRUFOOD
SPOONFOODS · TRUFOOD CEREAL FOOD

TFH 2-6421-100